Part 1

1121 Skill Review 1

REVIEW1.tex

Exercise 1 *Solve the equation for the given variable.*

$2x - 4y = 8$

$y = \boxed{\dfrac{8 - 2x}{-4}}$ $x = \boxed{\dfrac{8 + 4y}{2}}$

REVIEW2.tex

Exercise 2 *Solve the equation for the given variable.*

$\dfrac{3}{5}x + \dfrac{1}{2}y = \dfrac{3}{7}$

$y = \boxed{\dfrac{\frac{3}{7} - \frac{3}{5}x}{\frac{1}{2}}}$ $x = \boxed{\dfrac{\frac{3}{7} - \frac{1}{2}y}{\frac{3}{5}}}$

REVIEW3.tex

Exercise 3 *Write the result of the operation on the function $f(x)$.*

$f(x) = x^2$

$2f(x) = \boxed{2x^2}$

$f(2x) = \boxed{4x^2}$

$f(x - 3) = \boxed{(x - 3)^2}$

$f(x) - 3 = \boxed{x^2 - 3}$

$2f(x) - 3 = \boxed{2x^2 - 3}$

REVIEW4.tex

Exercise 4 *Solve the equation for the given variable.*

$-3a - 2b = 16$

$a = \boxed{\dfrac{16 + 2b}{-3}}$

$b = \boxed{\dfrac{16 + 3a}{-2}}$

REVIEW5.tex

Exercise 5 *Solve the equation for the given variable.*

$\frac{4}{n} - \frac{3}{m} = 7$

$m = \boxed{\frac{-3}{7 - \frac{4}{n}}}$

$n = \boxed{\frac{4}{7 + \frac{3}{m}}}$

`REVIEW6.tex`

Exercise 6 *Solve for x.*

$x^2 - 3x - 4 = 0$

Bigger value of $x = \boxed{4}$

Smaller value of $x = \boxed{-1}$

`REVIEW7.tex`

Exercise 7 *Solve for x.*

$4x^2 - \frac{1}{9} = 0$

Bigger value of $x = \boxed{\frac{1}{6}}$

Smaller value of $x = \boxed{-\frac{1}{6}}$

`REVIEW8.tex`

Exercise 8 *Solve for x.*

$2x^2 + 3x - 9 = 0$

Bigger value of $x = \boxed{\frac{3}{2}}$

Smaller value of $x = \boxed{-3}$

`REVIEW9.tex`

Exercise 9 *Solve the following inequality.*

$-3x > 7$

x $(< \checkmark / >)$ $\boxed{-\frac{7}{3}}$

REVIEW10.tex

Exercise 10 *Solve the following inequality.*
$2x + 4 < 2$
x $(< \checkmark / >)$ $\boxed{-1}$

REVIEW11.tex

Consider the functions $f(x)$ and $g(x)$
$f(x) = \sqrt{x-3}$
$g(x) = x^3$
Answer the following questions about the functions $f(x)$ and $g(x)$.

Exercise 11 *What are domain and range of $f(x)$?*
Domain: $[\boxed{3}, \boxed{\infty})$
Range: $[\boxed{0}, \boxed{\infty})$

Exercise 11.1 *What are domain and range of $g(x)$?*
Domain: $(\boxed{-\infty}, \boxed{\infty})$
Range: $(\boxed{-\infty}, \boxed{\infty})$

Exercise 11.1.1 *Find the following compositions of functions:*
$f(g(x)) = \boxed{\sqrt{x^3-3}}$
$g(f(x)) = \boxed{(\sqrt{x-3})^3}$
$f(f(x)) = \boxed{\sqrt{\sqrt{x-3}-3}}$
$g(g(x)) = \boxed{x^9}$

Exercise 11.1.1.1 *What are domain and range of $f(g(x))$?*
Domain: $[\boxed{3^{\frac{1}{3}}}, \boxed{\infty})$
Range: $[\boxed{0}, \boxed{\infty})$

Exercise 11.1.1.1.1 *What are domain and range of $g(f(x))$?*
Domain: $[\boxed{3}, \boxed{\infty})$
Range: $[\boxed{0}, \boxed{\infty})$